Vasquez High School -- Chemistry -- S'15 Exam #7 -- Chapter 16 -- 60 points

Write TRUE if the statement is true OR write the word(s) that substitute(s) for the underlined word(s) that would make it true. Writing false only earns partial credit. Three points each.

_____ 1) A solution is <u>amphoteric</u> because it has a weak acid and its conjugate base present.

_____ 2) The H_3O^+ ion is properly called the <u>hydronium</u> ion.

_____ 3) The ion product for neutral water at 25 °C is <u>10^{-7}</u> M.

_____ 4) An organic molecule that changes color depending on whether a solution is acidic or basic is commonly called a(n) <u>oxyacid</u>.

_____ 5) A weak acid has a <u>strong</u> conjugate base.

<u>Short answer/fill-in</u>. Answer each neatly and completely with the best answer possible. Three points apiece.

6) What is the purpose of performing a titration? _____

_____

7) Give an example of a diprotic acid: _____ Now a triprotic one: _____

Now a different acid that is an example of a strong one: _____

8) What is the definition of an acid in all three ways shown? (Six points on ths one)

_____

_____

_____

9) What is the name of the cylindrical glass device used to deliver precise amounts that has a stopcock at its

bottom? _____

<u>Calculation Section</u>. Show all appropriate formulas and show ALL your work. No work, no credit. Five points apiece on these.

10) What is the pH of a 8.65 x 10^{-6} M solution of HCl?

11) What is the pH of a 3.96 x 10^{-4} M solution of $Mg(OH)_2$?

12) Only 65 molecules in 100,000 molecules of vasquezic acid, $HVaO_3$, dissociates. What is the pH of a .0042 M solution of it?

13) What is the $[H^+]$ of a solution whose pOH is 12.15?

14) If 75.0 mL of a HCl solution requires 62.5 mL of 0.50 M NaOH to titrate it to its equivalence point, what is the concentration, in moles per liter, of the HCl solution?

15) Draw a pH curve with the proper axes, labels, numbers and curve.